**DEFENSE INFORMATION SYSTEMS AGENCY**
**JOINT INTEROPERABILITY TEST COMMAND**
**2001 Brainard Road**
**FORT HUACHUCA, ARIZONA 85613-7051**

IN REPLY
REFER TO: Networks, Transmission and
Intelligence Division (JTE)

MEMORANDUM FOR DISTRIBUTION ***Signed 3 January 2003***

SUBJECT: Joint Interoperability Test Certification of Avaya DEFINITY G3R and G3SI Digital Switching Systems

Reference: (a) DOD Directive 4630.5, "Interoperability and Supportability of Information Technology (IT) and National Security Systems (NSS)," 11 January 2002

(b) CJCSI 6212.01B, "Interoperability and Supportability of National Security Systems and Information Technology Systems," 8 May 2000

1. References (a) and (b) establish the Defense Information Systems Agency (DISA), Joint Interoperability Test Command (JITC), as the responsible organization for interoperability test certification. Additional references are provided in enclosure 1.

2. JITC tested the Avaya Definity G3R Digital Switching System with Software Release G3V10r.7585.6.0.3 and Release G3V10r.7585.6.0.2 (with software patch 4292) as set forth in reference (c) using test procedures documented in reference (d). The Avaya Definity G3SI digital switching system employs the same software and trunk/line card hardware as the G3R; JITC analysis determined the G3R and G3SI to be functionally identical for interoperability certification purposes. The Avaya Definity G3R and G3SI switches are certified for joint use in the Defense Information Systems Network (DISN) as a Small End Office Switch (SMEOS). Table 1 lists the associated software releases covered by this certification.

**Table 1. Certified Avaya DEFINITY Software Releases**

| Software Release | Software Medium | Switch Platform |
|---|---|---|
| G3V10r.7585.6.0.3 and G3V10r.7585.6.0.2 (with software patch 4292) | Optical Disk | Definity G3R |
| G3V10i.7585.6.0.3 and G3V10i.7585.6.0.2 (with software patch 4292) | PCMCIA | Definity G3SI |
| Note: The software is the same, however, Avaya distinguishes the different mediums and platforms by the 6th character of the Software Release. | | |
| **Legend:** PCMCIA – Personal Computer Memory Card International Association | | |

This certification expires upon system changes that affect interoperability, but no later than three years from the date of this memorandum.

3. This certification is based on interoperability testing conducted 19 February through 20 September 2002 at the JITC, Fort Huachuca, Arizona. This certification also includes a review of letters of compliance submitted by Avaya. The Certification Testing Summary in enclosure 2 provides more details about the test. The Certification Testing Summary documents the test results and describes the tested network and system configurations. System interoperability should be verified before deployment in an operational environment that varies significantly from the test environment.

4. The Avaya Definity G3 switch product line offers a Remote Switch Unit (RSU) capability referred to as the Survivable Remote Processor Expansion Port Network (SRP/EPN). This product line also offers a Voice over Internet Protocol (VoIP) capability. Preliminary testing was performed on these capabilities, but neither is covered by this certification.

5. Network Management (NM) capabilities of the Definity G3R platform were tested in accordance with the new DISA NS53 requirements as set forth in references (e) and (f). The Definity G3R and G3SI Digital Switches meet the NM requirements through the use of both serial and ethernet connections.

6. JITC distributes interoperability information via the JITC Electronic Report Distribution (ERD) system -- ERD uses

unclassified (NIPRNET) email. More comprehensive interoperability status information is available via the JITC System Tracking Program (STP). The STP is accessible by .mil/gov users on the NIPRNET at: https://stp.fhu.disa.mil/. Test reports, lessons learned, and related testing documents and references are on the JITC Joint Interoperability Tool (JIT) at: http://jit.fhu.disa.mil (NIPRNET), or http://199.208.204.125/ (SIPRNET).

7. The JITC point of contact is Mr. John Gese, DSN 879-5164 commercial (520) 538-5164, FAX DSN 879-4347 or e-mail to gesej@fhu.disa.mil.

FOR THE COMMANDER:

2 Enclosures:
1 Additional References
2 Certification Testing Summary

LESLIE F. CLAUDIO
Chief
Networks, Transmission and Intelligence Division

Distribution:
Joint Staff J6I, Room-1E833, Pentagon, Washington, DC 20318-6000
Joint Interoperability Test Command, Washington Operations Division, NSWC, ATTN: JTCA-IPTP, Building 900, 101 Strauss Avenue, Indian Head, MD 20640-5035
Defense Information Systems Agency, Interoperability Directorate, Technical Interoperability Assessment Branch, ATTN: Code IN11, 5600 Columbia Pike, Suite 240, Falls Church, VA 22041
Office of Chief of Naval Operations (N612T2), 2000 Navy Pentagon, Washington, DC 20350
Deputy Chief of Staff for Communications and Information, AF/SCT, 1250 Air Force Pentagon, Washington, DC 20330-1250
Department of the Army, Office of the Secretary of the Army, CIO/G6, Office Symbol SAIS-IOE-A, 107 Army Pentagon DISC4, Washington, DC 20310

JITC Memo, Networks, Transmission and Intelligence Division (JTE), Joint Interoperability Test Certification of Avaya DEFINITY G3R and G3SI Digital Switching Systems

Commander, MARCORSYSCOM, Code SE&I, Suite 315, 2033 Barnett Avenue, Quantico, VA 22134-5010
JS-J38, JCS, Pentagon, Washington, DC 20318
Defense Intelligence Agency/DS-CIO, Building 6000, Bolling AFB, Washington, DC 20340-3342
DOT&E, Strategic and C3I Systems, 1700 Defense Pentagon, Washington, DC 20301-1700
United States Coast Guard, COMDT/G-SCE (C4), 2100 2nd Street SW, Washington, DC 20593
Office of Assistant Secretary of Defense, C3I (C4ISR & Space Programs)/C3 Directorate, Crystal Mall 3, 7th Floor, Suite 7035, 1931 Jefferson Davis Highway, Arlington, VA 22202
Deputy Director for I/O Testing, Office of Under Secretary of Defense, AT&L Interoperability, Room 3E144, Pentagon, Washington, DC 20301
United States Joint Forces Command, J6I, C4 Plans and Policy, 1562 Mitscher Ave, Norfolk, VA 23551-2488
Office of Assistant Secretary of Defense, C3I/I3 Directorate, Crystal Mall 3, 7th Floor, 1931 Jefferson Davis Highway, Arlington, VA 22202
Deputy Director for I/O Testing, Office of Under Secretary of Defense, AT&L Interoperability, Room 3C261, Pentagon, Washington, DC 20301
United States Joint Forces Command, J6I, C4I Plans and Policy, 1562 Mitscher Ave, Norfolk, VA 23551-2488
United States Coast Guard, COMDT/G-SCE (C4), 2100 2nd Street SW, Washington, DC 20593
JS-J38, JCS, Pentagon, Washington, DC 20318
Commander, Defense Information Systems Agency (DISA), ATTN: NS53 (Mr. Osman), Room 5w23, 5275 Leesburg Pike (RTE 7) Falls Church, VA 22041

**ADDITIONAL REFERENCES**

(c) Defense Information Systems Agency (DISA), Joint Interoperability and Engineering Organization (JIEO), Technical Report 8249, "Defense Information System Network (DISN) Circuit Switched Subsystem, Defense Switched Network (DSN) Generic Switching Center Requirements (GSCR)," March 1997

(d) Joint Interoperability Test Command, "Defense Switched Network Generic Switch Test Plan (GSTP)," 17 June 1999

(e) Defense Information Systems Agency (DISA) NS53, Memorandum, "DSN Switch Network Management Interface," 26 July 2001

(f) Defense Information Systems Agency (DISA) NS53, Memorandum, "DSN Network Management Requirements for End Offices," 2 August 2001

## CERTIFICATION TESTING SUMMARY

**1. SYSTEM TITLE.** Avaya DEFINITY G3R Digital Switching System with Software Release G3V10r.7585.6.0.3 and Release G3V10r.7585.6.0.2 (with software patch 4292).

**2. PROPONENT.** Defense Information Systems Agency (DISA).

**3. PROGRAM MANAGER.** Mr. Howard Osman, ATTN NS53, Room 5w23 5275, Leesburg Pike (RTE 7), Falls Church, VA 22041, e-mail: Osmanh@ncr.disa.mil.

**4. TESTERS.** Joint Interoperability Test Command (JITC), Fort Huachuca, Arizona.

**5. SYSTEM UNDER TEST DESCRIPTION.** The Avaya Definity G3 Digital Switching System product line includes the G3R and the G3SI. These two platforms utilize the same software and trunk/line card hardware, and were developed to satisfy scalability requirements. Avaya's Definity G3R and G3SI digital switching systems are currently in use within the Defense Information Systems Network (DISN) providing Small End Office Switch (SMEOS) and Private Branch Exchange (PBX) functionality. If a switch satisfies SMEO criteria, it will satisfy the lesser standards of a PBX. Table 1 lists the associated software releases covered by this certification.

**Table 1. Certified Avaya DEFINITY Software Releases**

| Software Release | Software Medium | Switch Platform |
|---|---|---|
| G3V10r.7585.6.0.3 and G3V10r.7585.6.0.2 (with software patch 4292) | Optical Disk | Definity G3R |
| G3V10i.7585.6.0.3 and G3V10i.7585.6.0.2 (with software patch 4292) | PCMCIA | Definity G3SI |
| Note: The software is the same, however, Avaya distinguishes the different mediums and platforms by the 6th character of the Software Release. | | |
| **Legend:** PCMCIA – Personal Computer Memory Card International Association | | |

**6. OPERATIONAL ARCHITECTURE.** This test was completed using two configurations. Testing of the system's required functions and features were conducted using the test configuration depicted in figure 1. The configuration depicted in figure 2 is representative of the DSN operational environment and was used to complete the network integration sub-test. Figure 3 depicts Avaya's Definity G3R and G3SI Network Management System Interfaces for the Advanced Defense Switched Network Integrated Management Support System (ADIMSS).

**7. REQUIRED SYSTEM INTERFACES.** The Definity G3R and G3SI Digital Switching Systems Software Release G3V10x.7585.6.0.3 and Release

G3V10x.7585.6.0.2 (with software patch 4292), hereafter referred to as the system under test (SUT), must interface with current DSN equipment as defined by the Generic Switching Center Requirements (GSCR). Functional interface requirements that must be met for interoperability certification are listed in table 2 along with their associated Generic Switch Test Plan (GSTP) paragraphs.

**Table 2. GSCR Functional Interface Requirements**

| GSCR Functional Interface Requirements | DSN GSTP Criteria para(s) | Critical | GSCR Requirement para(s) |
|---|---|---|---|
| Preset Conference | II-1.2 | No | 2.2.3, 21.3 |
| Multi-Level Precedence and Preemption | II-2.2 | Yes | 2.2.1, 5.3.4.3 through 5.3.4.9 |
| Hotline Services | II-3.2 | No | 21.3.10 |
| System Interface | II-4.2 | Yes | 10.1 through 10.12 |
| Common Channel Signaling/Signaling System Number 7 | II-5.2 | No | 6.5, 2.2.5 |
| Integrated Services Digital Network | II-6.2 | Yes | 6.6, 21.1, 21.2, 21.3 |
| Attendant Services | II-7.2 | No | 2.1.3 |
| System Admin, Measurements, and Service Standards | II-8.2 | Yes | 9.1 through 9.5 |
| Y2K Rollover Dates | II-9.2 | Yes | NA |
| Y2K Valid Set Dates | II-10.2 | Yes | NA |
| Y2K Invalid Set Dates | II-11.2 | Yes | NA |
| Screening, Zone Restriction, and DSN Access Restriction | II-12.2 | Yes | 5.3.4 |
| Community of Interest | II-13.2 | No | 2.2.2 |
| Automatic Message Accounting | II-14.2 | Yes | 8.1 |
| Call Treatments | II-15.2 | Yes | 5.2 |
| Essential Service Protection | II-16.2 | No | 5.3.9 |
| Internal Overload Control | II-17.2 | No | 5.3.8 |
| Automatic Call Gap | II-18.2 | No | 16.5.3, 16.6.3 |
| DSN Announcements | II-19.2 | Yes | 5.6 |
| Nailed-Up Connections | II-20-2 | No | 2.2.4 |

**Table 2. GSCR Functional Interface Requirements (continued)**

| GSCR Functional Interface Requirements | DSN GSTP Criteria para(s) | Critical | GSCR Requirement para(s) |
|---|---|---|---|
| Network Integration | II-21.2 | Yes | 2.2.1, 2.2.5, 6.5.2, 6.5.10-11, 6.6, 10.5.5, 5.3.4.7 |
| Tactical Switch/DSN Interoperability | II-22.2 | No | 10.6 |
| Advanced Defense Switched Network Integrated Management Support System | II-23.2 | Yes | 2.1.10, 16.1 |
| Common Data Channel (CDC) | II-24.2 | No | See Note |
| Electronic Key Telephone Service | II-25.2 | No | 21.2 |
| Note: CDC is an optional requirement unique to DISN-E. Switches that have a requirement to interface to the DSN European KNS-4100 switches must be capable of passing CDC links transparently. | | | |
| **Legend:**<br>DISN-E – Defense Information Systems Network Europe<br>DSN – Defense Switched Network<br>GSCR – Generic Switching Center Requirements<br>GSTP – Generic Switch Test Plan<br>NA – Not Applicable<br>Y2K – Year 2000 | | | |

**8. TEST NETWORK DESCRIPTION.** The SUT was tested at JITC's Network Engineering and Integration Laboratory (NEIL) in a manner and configuration similar to that of the DSN operational environment. This test was conducted using three test configurations shown in figures 1 through 3. Testing of the system's required functions and features were conducted using the test configuration depicted in figure 1, which accurately emulates the DSN operational environment. Network Integration testing, which accurately emulates the DSN operational environment, was conducted using the test configuration depicted in figure 2. Figure 3 depicts the test configuration used to test the ADIMSS network management required functions and features.

**9. SYSTEM CONFIGURATIONS.** Table 3 provides the system configurations used in the test.

**Table 3. Tested System Configurations**

| System Name | Hardware | Software Release |
|---|---|---|
| Nortel Networks MSL-100 | RISC Processor | MSL-15 |
| Avaya Definity G3R | RISC Processor | G3V10r.7585.6.0.3 and G3V10r.7585.6.0.2 (with software patch 4292) |

**Table 3. Tested System Configurations (continued)**

| System Name | Hardware | Software Release |
|---|---|---|
| Avaya Definity G3SI | Intel Processor | G3V10i.7585.6.0.3 and G3V10i.7585.6.0.2 (with software patch 4292) |
| Avaya Definity G3CSI ProLogix | Intel Processor | G3V10i.7585.6.0.3 and G3V10i.7585.6.0.2 (with software patch 4292) |
| Siemens EWSD | CP 113C | 18 |
| Siemens KNS-4100 | SAB 8086 Processor | APS4V2.3 |
| Lucent 5ESS | 5ESS | 5E15 |
| SMU 96 Tactical Gateway | Litton Processor | RD302185 |
| Tekelec STP | Signaling Server Platform | 23.1 |
| Nortel Networks Broad Band STP | Eagle Data Packet Switch | 3.0.3.18d |
| DSS Red Switch | Force Board Processor | 8.03 |
| MARCONI ATM switches | SCP-I960 Processor | Versions 6.2 and 7.1 |

**Legend:**
ATM – Asynchronous Transfer Mode
MSL – Meridian Switching Load
RISC – Reduced Instruction Set Computer
CP – Central Processor
DSS – Digital Small Switch
EWSD – Elektronisches Wahl-System Digital
SMU – Switch Multiplexer Unit
STP – Signaling Transfer Point

**10. TESTING LIMITATIONS.** The Definity G3R digital switching system was the only switch platform tested by JITC, however, the test results are applicable to the Definity G3SI. The Avaya Definity G3SI digital switching system employs the same hardware and software as the G3R, and JITC analysis determined it to be functionally identical for certification purposes.

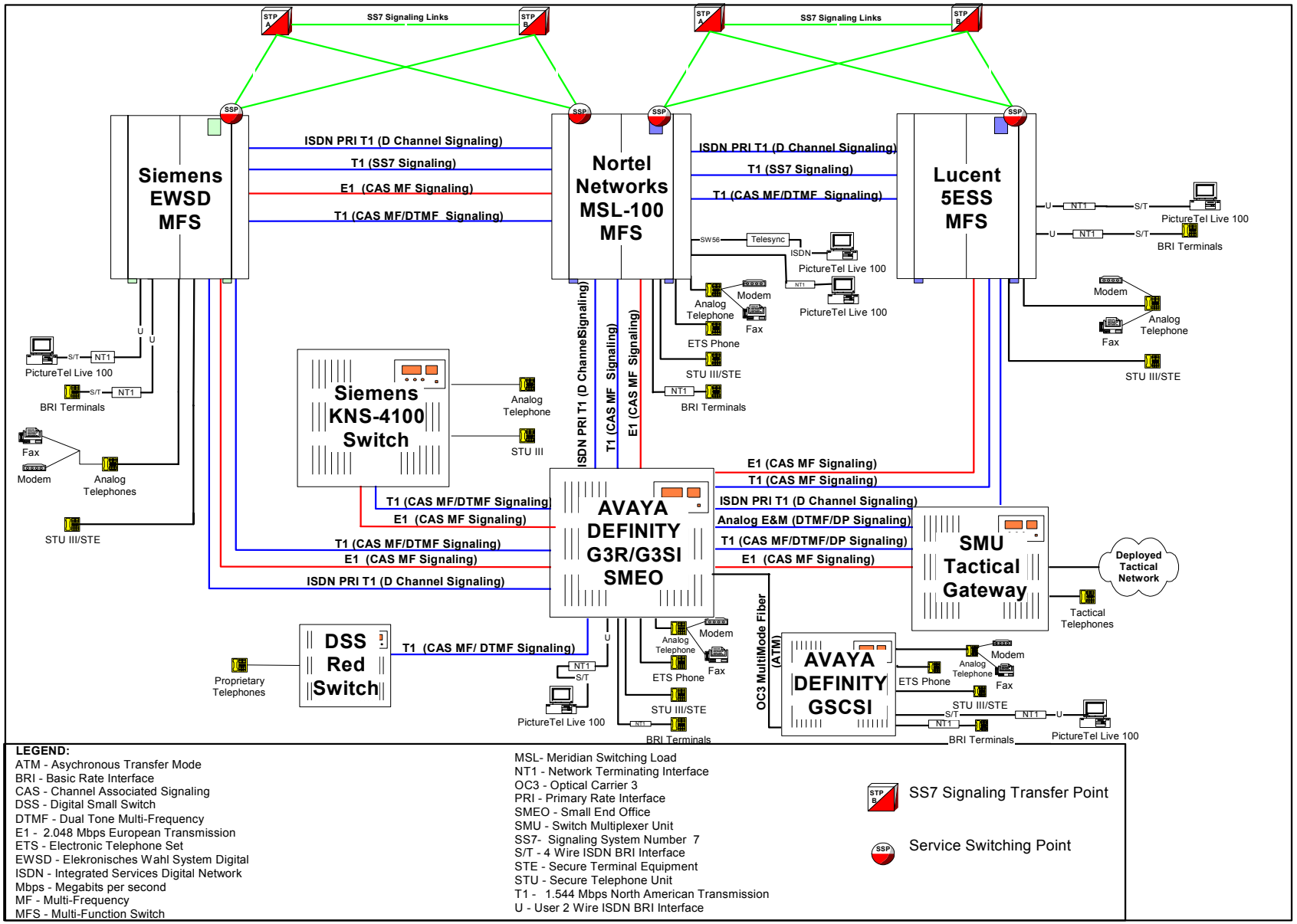



**Figure 1. DSN Test Configuration**

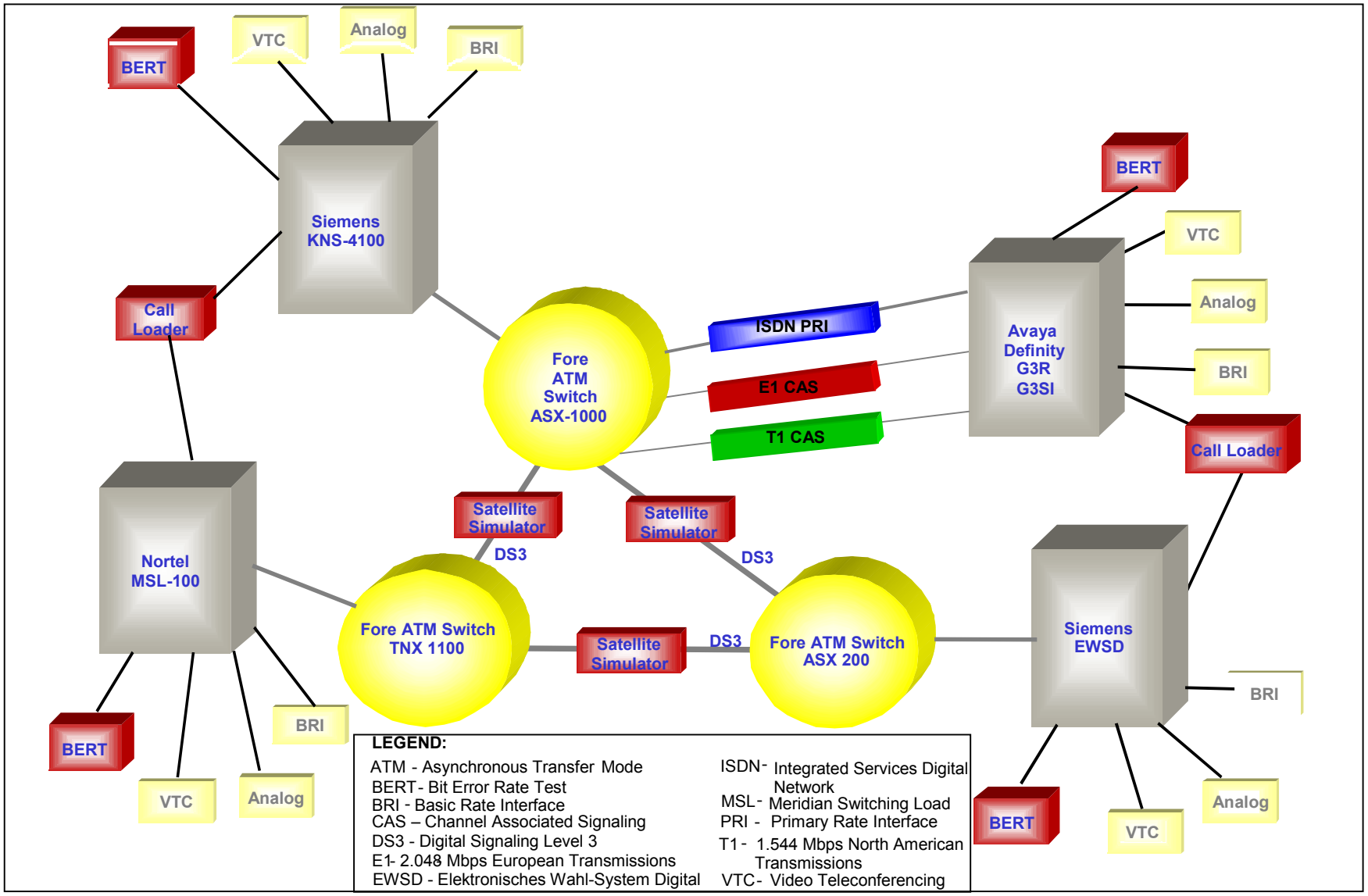
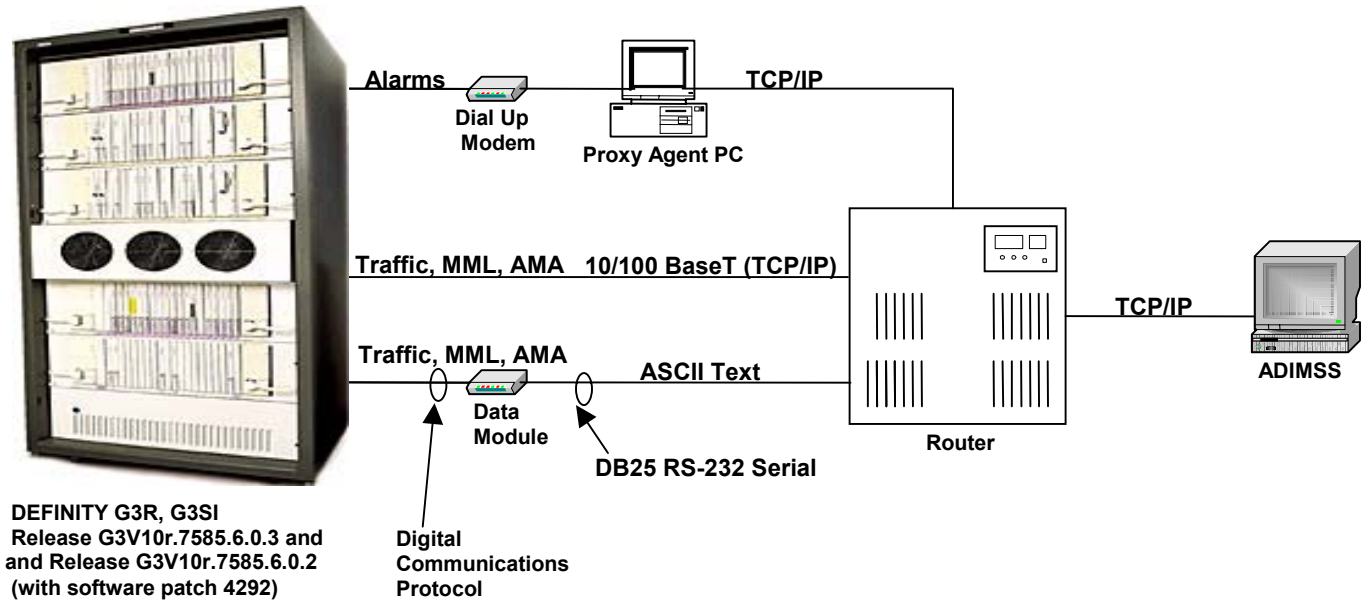



**Figure 2. Network Integration Test Configuration**




**LEGEND:**

10/100 BaseT – BaseT (like in 10 BaseT Ethernet) is Baseband Operation, Twisted Pair
ADIMSS - Advanced Defense Switched Network Integrated Management Support System
AMA - Automated Message Accounting
ASCII - American Standard Code for Information Interchange
MML - Man Machine Language
PC - Personal Computer
TCP/IP - Transmission Control Protocol/Internet Protocol

**Figure 3. DEFINITY G3R, and G3SI ADIMSS Network Management System Interface**

**11. TEST RESULTS.** Table 4 synopsizes the SUT test results. Paragraph 12 provides a detailed discussion of test results and discussion of any test discrepancies for each of the functional interface requirements certified. The identified test discrepancies shown below denote only those test discrepancies that remained opened after testing was completed and software patches were applied.

**Table 4. SUT Test Results**

| DSN GSTP Test Title | | Tested | Test Discrepancies | DSN GSTP Criteria para(s) | GSCR Requirement para(s) |
|---|---|---|---|---|---|
| **Sub-Test D-1 Preset Conference** | | | | | |
| D-1.1 | Switch Capacity | No | NA | II-1.2.a | 2.2.3 |
| D-1.2 | Originations and Recordings | No | NA | II-1.2.b-d | 2.2.3, 2.2.3.1 |
| D-1.3 | MLPP Interaction, Auto Redial, Alternate Address, Bridge Release, Secondary Conference, Preset Conference and ISDN Interoperability | No | NA | II-1.2e-i | 2.2.3.2, 2.2.3.3, 2.2.3.4, 2.2.3.5, 2.2.3.6 |
| D-1.4 | ISDN Features | No | NA | II-1.2k | 21-3.11.1, 21-3.11.2, 21-3.11.3 |
| **Sub-Test D-2 Multi-Level Precedence and Preemption (MLPP)** | | | | | |
| D-2.1 | Network Preemption | Yes | No | II-2.2a-l | 22.1.1-3 |
| D-2.2 | Call Waiting | Yes | Yes | II-2.2.k.1 | 5.3.4.7.1 |
| D-2.3 | Call Hold | Yes | No | II-2.2.k.2 | 5.3.4.7.2 |
| D-2.4 | Call Forward Busy Station | Yes | No | II-2.2.k.3 | 5.3.4.7.3 |
| D-2.5 | Call Forward No Reply | Yes | No | II-2.2.k.4 | 5.3.4.7.4 |
| D-2.6 | Call Transfer | Yes | Yes | II-2.2.k.5 | 5.3.4.7.5 |
| D-2.7 | Conference Calling | No | NA | II-2.2.k.6 | 5.3.4.7.6 |
| D-2.8 | Precedence Calls to a Remote Office | Yes | No | II-2.2.k.9 | 5.3.4.7.9 |
| D-2.9 | Circular Line Hunting | Yes | No | II-2.2.k.11 | 5.3.4.7.7 |
| **Sub-Test D-3 Hotline Services** | | | | | |
| D-3.1 | Hotline Services | Yes | No | II-3.2.a-f | 21.3.10 |
| **Sub-Test D-4 System Interface** | | | | | |
| D-4.1 | PCM-24 T1 | Yes | No | II-4.2 | 10.2.1 |
| D-4.2 | PCM-30 E1 | Yes | No | II-4.2 | 10.2.1 |
| D-4.3 | ISDN BRI | Yes | No | II-4.2 | 10.2.2 |
| D-4.4 | ISDN PRI | Yes | No | II-4.2 | 10.5.5 |
| D-4.5 | DSNWWNDP | Yes | Yes | II-4.2 | 5.3.3.1.2 |

**Table 4. SUT Test Results (continued)**

| DSN GSTP Test Title | | Tested | Test Discrepancies | DSN GSTP Criteria para(s) | GSCR Requirement para(s) |
|---|---|---|---|---|---|
| **Sub-Test D-5 Common Channel Signaling/Signaling System Number 7 (CCS/SS7)** | | | | | |
| D-5.1 | Signaling Link Characteristics | No | NA | II-5.2.b-e | 6.5.2 |
| D-5.2 | Signaling Network Management Performance Measurements | No | NA | II-5.2.f-l | 6.5.4 |
| D-5.3 | MTP/ISUP Analysis-Analog | No | NA | II-5.2.m | 2.2.5, 6.6.3, 6.5.10.1.c, 6.5.11 |
| D-5.4 | MTP/ISUP Analysis-ISDN Users | No | NA | II-5.2.m | |
| D-5.5 | MTP/ISUP Analysis-Call to Busy Station | No | NA | II-5.2.m | |
| D-5.6 | SS7/MF Interworking | No | NA | II-5.2.a | 6.5.10 |
| D-5.7 | SS7/MLPP Interworking | No | NA | II-5.2.a | 6.5.11 |
| D-5.8 | SCCP Capabilities | No | NA | II-5.2.g-h | 6.5.5 |
| **Sub-Test D-6 Integrated Services Digital Network (ISDN)** | | | | | |
| D-6.1 | BRI/SS7 Interworking (NX64) | No | NA | II-6.2.a | 21.1 |
| D-6.2 | PRI/SS7 Interworking (NX64) | No | NA | II-6.2.a | 21.2 |
| D-6.3 | BRI/SS7 Interworking (NX56) | No | NA | II-6.2.b | 21.2 |
| D-6.4 | PRI/SS7 Interworking (NX56) | No | NA | II-6.2.b | 21.2 |
| D-6.5 | MLPP and Interaction with other Services | Yes | Yes | II-6.2.c.1 | 21.3, 21.3.1 |
| D-6.6 | Supplemental Services Conference Calling | Yes | Yes | II-6.2.c.2 | 21.3.2 |
| D-6.7 | Supplemental Service, User to User Signaling | Yes | Yes | II-6.2.c.3 | 21.3.3 |
| D-6.8 | Supplemental Service, Call Hold | Yes | Yes | II-6.2.c.4 | 21.3.4 |
| D-6.9 | Supplemental Service, Call Waiting | Yes | Yes | II-6.2.c.5 | 21.3.5 |

**Table 4. SUT Test Results (continued)**

| DSN GSTP Test Title | | Tested | Test Discrepancies | DSN GSTP Criteria para(s) | GSCR Requirement para(s) |
|---|---|---|---|---|---|
| **Sub-Test D-6 Integrated Services Digital Network (ISDN) (continued)** | | | | | |
| D-6.10 | Supplemental Service, Normal Call Transfer | Yes | Yes | II-6.2.c.6 | 21.3.6 |
| D-6.11 | Supplemental Service, Explicit Call Transfer | Yes | Yes | II-6.2.c.7 | 21.3.7 |
| D-6.12 | Supplemental Service, ISDN Call Deflection | Yes | Yes | II-6.2.c.8 | 21.3.8 |
| D-6.13 | Supplemental Service, Community of Interest | No See Note | NA | II-6.2.c.9 | 21.3.9 |
| D-6.14 | Supplemental Service, Hotline | Yes See Note | No | II-6.2.d | 21.3.10 |
| D-6.15 | Supplemental Service, Preset Conference Calling | No | NA | II-6.2.e | 21.3.11, 21.3.11.1-4 |
| D-6.16 | DSN ISDN User to Network Signaling | Yes | Yes | II-6.2.f | 21.3.11.8 |
| D-6.17 | Messaging | No | NA | II-6.2.g | 21.3.11.9 |
| **Sub-Test D-7 Attendant Services** | | | | | |
| D-7.1 | Call Display | Yes | No | II-7.2.a | 2.1.3.2 |
| D-7.2 | Class of Service Override | Yes | No | II-7.2.b | 2.1.3.3 |
| D-7.3 | Busy Override and Busy Verification | Yes | No | II-7.2.c | 2.1.3.4 |
| D-7.4 | Interposition Calling | Yes | No | II-7.2.d | 2.1.3.5 |
| D-7.5 | Interposition Transfer | Yes | No | II-7.2.e | 2.1.3.6 |
| D-7.6 | Call Extension | Yes | No | II-7.2.f | 2.1.3.7 |
| D-7.7 | Call Hold | Yes | No | II-7.2.g | 2.1.3.8 |
| D-7.8 | Two-Party Hold | Yes | No | II-7.2.h | 2.1.3.9 |
| D-7.9 | Unattended Console | Yes | No | II-7.2.i | 2.1.3.10 |
| D-7.10 | Audible Call Indicators | Yes | No | II-7.2.j | 2.1.3.11 |
| D-7.11 | Automatic Recall of Attendant | Yes | No | II-7.2.k | 2.1.3.12 |

Note: Although these functions are listed under ISDN Supplemental Services in the GSCR, they are not specific to ISDN Supplemental Services, and were tested separately as applicable.

**Table 4. SUT Test Results (continued)**

| DSN GSTP Test Title | | Tested | Test Discrepancies | DSN GSTP Criteria para(s) | GSCR Requirement para(s) |
|---|---|---|---|---|---|
| **Sub-Test D-8 System Administration, Measurements, and Service Standards** | | | | | |
| D-8.1 | Traffic Measurements | Yes | No | II-8.2.a | 9.2.2.1 |
| D-8.2 | Database Management | Yes | No | II-8.2.b | 9.5 |
| **Sub-Test D-9 Y2K Rollover Dates** | | | | | |
| D-9.1 | Date Transition Test | Yes | No | I-.9.2 | None |
| **Sub-Test D-10 Y2K Valid Set Dates** | | | | | |
| D-10.1 | Valid Set Dates | Yes | No | II-10.2 | None |
| **Sub-Test D-11 Y2K Invalid Set Dates** | | | | | |
| D-11.1 | Invalid Set Dates | Yes | No | II-11.2 | None |
| **Sub-Test D-12 Screening, Zone Restriction, and DSN Access Restriction** | | | | | |
| D-12.1 | Zone Restriction Capacity | Yes | No | II-12.2.b | 5.3.4.2 |
| D-12.2 | DSN Access Restriction | Yes | No | II-12.2.c | 5.3.4.3 |
| D-12.3 | Screening | Yes | No | II-12.2.a | 5.3.4 |
| D-12.4 | Zone Restriction | Yes | No | II-12.2.b | 5.3.4.2 |
| **Sub-Test D-13 Community of Interest (COI)** | | | | | |
| D-13.1 | Switch Capacity | No | NA | II-13.2.a | 2.2.2.1 |
| D-13.2 | COI General Treatment | No | NA | II-13.2.b | 2.2.2.1 |
| D-13.3 | COI Precedence Treatment | No | NA | II-13.2.c | 2.2.2.2 |
| **Sub-Test D-14 Automatic Message Accounting (AMA)** | | | | | |
| D-14.1 | AMA Call Detail Record | Yes | Yes | II-14.2 | 8.1 |
| **Sub-Test D-15 Call Treatments** | | | | | |
| D-15.1 | Originating Busy Treatment | Yes | No | II-15.2.a | 5.2.1.1 |
| D-15.2 | Busy/Idle Status Treatment | Yes | No | II-15.2.b | 5.2.2.1 |
| **Sub-Test D-16 Essential Service Protection (ESP)** | | | | | |
| D-16.1 | ESP | No | NA | II-16.2.a | 5.3.9 |
| **Sub-Test D-17 Internal Overload Control (IOC)** | | | | | |
| D-17.1 | IOC | No | NA | II-17.2.a-f | 5.3.8 |
| **Sub-Test D-18 Automatic Call Gap (ACG)** | | | | | |
| D-18.1 | Automatic Call Gap | No | NA | II-18.2.a-c | 16.5.3.2 |
| D-18.2 | Manual Call Gap | No | NA | II-18.2.a-c | 16.6.3.1 |
| D-18.3 | CanF, CanT, and SKIP | No | NA | II-18.2.a-c | 16.6.3.2 |

**Table 4. SUT Test Results (continued)**

| DSN GSTP Test Title | | Tested | Test Discrepancies | DSN GSTP Criteria para(s) | GSCR Requirement para(s) |
|---|---|---|---|---|---|
| **Sub-Test D-19 DSN Announcements** | | | | | |
| D-19.1 | DSN Announcement Capacity | Yes | No | II-19.2.a | 5.6 |
| D-19.2 | DSN Announcement | Yes | No | II-19.2.b-c | 5.6 |
| **Sub-Test D-20 Nailed-Up Connections** | | | | | |
| D-20.1 | Nailed-Up Connections | Yes | Yes | II-20.2 | 2.2.4 |
| **Sub-Test D-21 Network Integration** | | | | | |
| D-21.1 | MLPP | Yes | No | II-21.2 | 2.2.1, 5.3.4.7 |
| D-21.2 | System Interface | Yes | No | II-21.2 | 2.2.1, 10.5.5 |
| D-21.3 | CCS/SS7 | No | NA | II-21.2 | 6.5.2, 2.2.5, 6.5.10-11, 6.6 |
| **Sub-Test D-22 Tactical Switch/DSN Interoperability** | | | | | |
| D-22.1 | DSN Switch to Tactical Elements | Yes | No | II-22.2 | 10.6 |
| **Sub-Test D-23 Advanced Defense Switched Network Integrated Management Support System (ADIMSS)** | | | | | |
| D-23.1 | Performance Management | Yes | No | II-23.2.a | 16.1 |
| **Sub-Test D-24 Common Data Channel (CDC)** | | | | | |
| D-24.1 | CDC | Yes | No | II-24.2.a | Optional |
| **Sub-Test D-25 Electronic Key Telephone Service (EKTS)** | | | | | |
| D-25.1 | EKTS | Yes | No | II-25.2.a | 21.2 |

**LEGEND:**

BRI – Basic Rate Interface
CanF – Cancel From Network Management Manual Control
CanT – Cancel To Network Management Manual Control
CCS – Common Channel Signaling
DSN – Defense Switched Network
E1 – 2.048 Megabits Per Second European Transmission
GSCR – Generic Switching Center Requirements
GSTP – Generic Switch Test Plan
ISDN – Integrated Services Digital Network
ISUP – ISDN User Part
MF – Multi-Frequency
MTP – Message User Part
NA – Not Applicable
PCM – Pulse Code Modulation
PRI – Primary Rate Interface
SCCP – Signaling Connect Control Point
SS7 – Signaling System Number 7
WWNDP – Worldwide Numbering and Dialing Plan

**12. DISCUSSION.** The following subparagraphs explain in further detail the test results and discrepancies noted in table 4 and assess interoperability compliance to the GSCR and interoperability requirements.

**a. D-1 Preset Conference.** The SUT does not offer a preset conferencing capability. This functional requirement, however, is optional for a SMEOS.

**b. D-2 Multi-Level Precedence and Preemption (MLPP).** The SUT meets all GSCR and interoperability requirements for MLPP with the following exceptions:

(1) The SUT does not have the ability to establish a three-party call with different precedence levels. The GSCR states that at a minimum in three-party service each call will have its own precedence level. The SUT will classmark each call at the highest precedence level. This discrepancy will have no operational impact.

(2) When a precedence call above ROUTINE is active on the SUT with a subscriber that is assigned the precedence call waiting feature, and a subsequent call of lower precedence above ROUTINE is placed to the same subscriber, the appropriate precedence call waiting tone is invoked, however the active call cannot be placed on hold and must be disconnected before the waiting call can be answered. This anomaly occurs only on ISDN BRI or Digital sets. This discrepancy will require user training and will have a minimum operational impact.

**c. D-3 Hotline Services.** The SUT meets all GSCR and interoperability requirements for hotline services.

**d. D-4 System Interface.** The SUT meets all GSCR and interoperability requirements for system interfaces, with the following exceptions:

(1) Only 4 and 5-digit intra-switch dialing is supported. The SUT does not support 7-digit intra-switch dialing. This discrepancy will have minimal operational impact. Avaya is expected to resolve this discrepancy in software release 11.

(2) The SUT when placing inter-switch DSN calls must dial the “94” access code for ROUTINE precedence. The GSCR states that inter-switch ROUTINE calls can be dialed with or without the access code “94” for ROUTINE precedence calls. Inter-switch ROUTINE precedence calls in DSN worldwide use the access code for ROUTINE; consequently this discrepancy will have no operational impact.

**e. D-5 Common Channel Signaling/Signaling System Number 7 (CCS/SS7).** The SUT does not offer CCS/SS7 capability. This functional requirement, however, is optional for a SMEOS.

**f. D-6 Integrated Services Digital Network (ISDN).** The SUT meets all the GSCR and interoperability requirements with the following exceptions:

(1) The SUT does not support the unique ISDN BRI Supplemental Services as specified in the GSCR paragraphs listed below. ISDN BRI Supplemental Services are currently not supported in any of the DSN switches worldwide; consequently this discrepancy will have no adverse operational impact.

- Conference Calling. GSCR Para. 21.3.2
- User-to-User Signaling. GSCR Para. 21.3.3
- Call Hold. GSCR Para. 21.3.4
- Call Waiting. GSCR Para. 21.3.5
- Normal Call Transfer. GSCR Para. 21.3.6
- Explicit Call Transfer. GSCR Para. 21.3.7
- ISDN Call Deflection. GSCR Para. 21.3.8
- Preset Conference Calling. GSCR Para. 21.3.11

(2) The SUT does not allow call completion between unlike MLPP service domains over ANSI T1. 619a idle resources. The ANSI T1. 619a requirement states that only preemption between unlike domains will not be allowed. Currently the DSN worldwide network is configured with only one MLPP service domain (service domain 0), consequently this discrepancy will have no operational impact. Avaya is committed to fix this discrepancy in release 11.

**g. D-7 Attendant Services.** The SUT meets all GSCR and interoperability requirements for attendant services.

**h. D-8 System Administration, Measurements, and Service Standards.** The SUT meets all the GSCR and interoperability requirements for system administration, measurement, and service standards, with the exception that the traffic measurement's call usage is in hundred call seconds (CCS) not seconds, as required by the GSCR. The DISN Network Management System (ADIMSS) has the ability to convert CCS to seconds; therefore this discrepancy will have no adverse operational impact.

**i. D-9 Year 2000 (Y2K) Rollover Dates.** The SUT responded properly to all rollover dates and meets all interoperability requirements for Y2K rollover dates.

**j. D-10 Y2K Valid Set Dates.** The SUT responded properly to all valid set dates and meets all interoperability requirements for Y2K valid set dates.

**k. D-11 Y2K Invalid Set Dates.** The SUT responded properly to all invalid set dates and meets all interoperability requirements for Y2K invalid set dates.

**l. D-12 Screening, Zone Restriction, and DSN Access Restriction.** The SUT meets all GSCR and interoperability requirements for screening, zone restriction, and DSN access restriction.

**m. D-13 Community of Interest (COI).** The SUT does not offer COI capability. This functional requirement however, is optional for a SMEOS.

**n. D-14 Automatic Message Accounting (AMA).** The SUT meets all GSCR interoperability requirements for AMA, with the following exception: The date is displayed in a standard format (MM/DD/YY) not in Julian format as required by the

GSCR. The DISN Network Management System (ADIMSS) has the ability to convert standard date format to Julian date format, consequently this discrepancy will have no adverse operational impact.

**o. D-15 Call Treatments.** The SUT meets all GSCR interoperability requirements for call treatments.

**p. D-16 Essential Service Protection (ESP).** The SUT does not offer an ESP capability. This functional requirement, however, is optional for a SMEOS.

**q. D-17 Internal Overload Control (IOC).** The SUT does not offer an IOC capability. This functional requirement, however, is optional for a SMEOS.

**r. D-18 Automatic Call Gap (ACG).** The SUT does not offer CCS/SS7 ACG capability. This functional requirement however, is optional for a SMEOS.

**s. D-19 DSN Announcements.** The SUT meets all GSCR and interoperability requirements for DSN announcements with one exception. The SUT does not provide an Isolated Code Announcement (ICA) as required by the GSCR. The SUT has the ability to provide a network T120 busy in lieu of an ICA, consequently this discrepancy will have no adverse operational impact.

**t. D-20 Nailed-Up Connections**

(1) The SUT meets all GSCR and interoperability requirements for T-1 and E-1 Channel Associated Signaling (CAS) nailed-up connections, with the following exceptions:

(a) The T-1 and E-1 CAS nailed-up connections do not allow supervision at one side of the nailed-up connection to be repeated at the other end as specified in the GSCR paragraph 2.2.4.f.

(b) Nailed-up connections between lines and trunks are not supported, as specified in the GSCR paragraph 2.2.4.b.

(2) This functional requirement, however, is optional for a SMEOS.

**u. D-21 Network Integration.** The SUT meets all GSCR and Interoperability requirements for network integration.

**v. D-22 Tactical Switch/DSN Interoperability.** The SUT meets all GSCR and interoperability requirements for tactical switch/DSN interoperability.

**w. D-23 Advanced Defense Switched Network Integrated Management Support System (ADIMSS).** The interfaces tested between SUT and ADIMSS, as

shown in figure 3, consist of both asynchronous serial and Ethernet (802.3) connections. The SUT meets all GSCR and interoperability requirements for ADIMSS.

**x. D-24 Common Data Channel (CDC).** There are no GSCR requirements for CDC, however, CDC has been implemented on the KNS-4100 legacy switching systems deployed in Europe, and switches that have a requirement to interface to the DSN European KNS-4100 switches must be capable of passing CDC traffic transparently. The SUT meets all the interoperability requirements to interface with the KNS-4100 CDC links.

**y. D-25 Electronic Key Telephone Service (EKTS).** The SUT meets all GSCR and interoperability requirements for EKTS. The following sub-tests under EKTS were conducted in accordance with GSCR paragraph 21.2, table 21-3:

(1) Multiple directory numbers (DNs) per terminal

(2) Analog member of an EKTS group

(3) Multiple DN appearances per call appearance call handling

(4) Hold and retrieve

(5) Bridging and DN-bridging

(6) Intercom calling

(7) Membership in a multi-line hunt group

(8) Abbreviated and delayed ringing

(9) Automatic and/or manual bridged call exclusion

(10) MLPP interaction with an EKTS group

**z. Letter of certification/compliance of "L" and "V" items listed in table E-1 of Appendix E of the GSTP.** A letter from Avaya satisfied the certification/compliance of "L" and "V" items listed in appendix E of the GSTP. The SUT meets the entire certification/compliance category "L" and "V" in table E-1 of appendix E of the GSTP with minor exceptions. Exceptions were reviewed and assessed by the DISA, Information Transport Engineering Support Organization (ITESO), D6, and determined to have no adverse operational impact.

**13. SUMMARY.** The Definity G3R and G3SI, with their associated software releases listed in table 1, are certified for joint use in the DISN, in accordance with the requirements set forth in reference (c). Minor discrepancies identified during testing and

the GSCR requirements not tested will have no adverse operational impact. A summary for each functional interface required by the GSCR is provided in table 5.

**Table 5. Functional Interface Certification Status Summary**

| GSCR Functional Interface Requirements | Critical | Status |
|---|---|---|
| Preset Conference | No | NA |
| Multi-Level Precedence and Preemption | Yes | Passed |
| Hotline Services | No | Passed |
| System Interface | Yes | Passed |
| CCS/SS7 | No | NA |
| Integrated Services Digital Network | Yes | Passed |
| Attendant Services | No | Passed |
| System Admin, Measurements, and Service Standards | Yes | Passed |
| Y2K Rollover Dates | Yes | Passed |
| Y2K Valid Set Dates | Yes | Passed |
| Y2K Invalid Set Dates | Yes | Passed |
| Screening, Zone Restriction, and DSN Access Restriction | Yes | Passed |
| Community of Interest | No | NA |
| Automatic Message Accounting | Yes | Passed |
| Call Treatments | Yes | Passed |
| Essential Service Protection | No | NA |
| Internal Overload Control | No | NA |
| Automatic Call Gap | No | NA |
| DSN Announcements | Yes | Passed |
| Nailed -Up Connections | No | Failed |
| Network Integration | Yes | Passed |
| Tactical Switch/DSN Interoperability | No | Passed |
| Advanced Defense Switched Network Integrated Management Support System (ADIMSS) | Yes | Passed |
| Common Data Channel (CDC) | No | Passed |
| Electronic Key Telephone Service (EKTS) | No | Passed |

**Table 5. Functional Interface Certification Status Summary (continued)**

| GSCR Functional Interface Requirements | Critical | Status |
|---|---|---|
| **LEGEND:**<br>CCS – Signaling System Number 7<br>DSN – Defense Switched Network<br>GSCR – Generic Switching Center Requirements<br>NA – Not Applicable<br>Y2K – Year 2000 | | |

**14. TEST AND ANALYSIS REPORT.** Detailed results are documented in the JITC report, "Joint Interoperability Test Certification of Avaya Definity G3R, G3SI Digital Switching Systems with software Releases identified in table 1. This report will be available on the Joint Interoperability Tool (JIT). The JIT homepage is http://jit.fhu.disa.mil (NIPRNET), or http://199.208.204.125/ (SIPRNET). The JIT has links to JITC interoperability documents to provide the DoD community, including the Warfighter in the field, easy access to the latest interoperability information.

System interoperability status information is available via the JITC System Tracking Program (STP). The STP is accessible by .mil/.gov users on the NIPRNET at: https://stp.fhu.disa.mil/.